

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

SDMS Document



68002

MAR 10 1989

BY TELEFAX and
CERTIFIED MAIL
RETURN RECEIPT REQUESTED P-651-623-531

Mr. H. Gilbert Weil
Union Carbide Corporation
P.O. Box 670
Bound Brook, New Jersey 08805

Re: SCP-Carlstadt Site, Administrative Orders Index Nos. II-
CERCLA-50114 and II-CERCLA-60102

Dear Mr. Weil:

Enclosed for Respondents' use in completing the Feasibility Study (FS) for the above-referenced site are summary tables from the Endangerment Assessment currently being prepared for EPA by Clement Associates.

By copy of this letter, I am transmitting the tables to Respondents' consultant, ERM.

If you have any questions regarding this matter, please contact me at your convenience.

Sincerely yours,

Janet Feldstein, Project Manager
New Jersey Compliance Branch

Enclosure

cc: Tom Armstrong, General Electric
William L. Warren, Esq.
Pamela Lange, NJDEP w/enclosure
Harry Yeh, EBASCO "
Marian Donovan Carlin, ERM "

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TABLE E-2 (Continued)
SUMMARY OF SCP SITE
ENDANGERMENT ASSESSMENT

Environmental Media	Results	Predominant Chemicals (a)
	<p><u>Human Health Risks</u></p> <p>Excess lifetime cancer risks exceeded 10^{-6} (one in one million) for trespassers who may contact on-site surface soil (average and maximum cases).</p> <p>Under future site use conditions, excess lifetime cancer risks exceed 10^{-6} for possible future on-site workers who may contact surface soil (average and maximum cases).</p> <p>Under future site use conditions, excess lifetime cancer risks exceeded 10^{-6} for possible future on-site construction workers who may contact subsurface soil.</p> <p>Adverse noncarcinogenic effects may occur among trespassers who contact surface soil under current site use and among possible future on-site workers who contact surface soil (maximum cases only).</p> <p><u>Ecological Risks</u></p> <p>Not evaluated; no terrestrial mammals observed on-site, man-made fill is unfavorable to plant life.</p> <p><u>Migration Potential</u></p> <p>Contaminants present in on-site soil have migrated downward to deeper soil depths, and into the water table and till aquifers. Further migration into the bedrock aquifer is likely. Chemicals may also be released from soil into air via volatilization and suspension of surface soil by wind or vehicles. Chemicals may migrate via surface soil runoff into Peach Island Creek.</p> <p><u>Exceedances of ARARs/Other Guidance</u></p> <p>NJDEP ECRA Objectives for soil</p>	<p>PCBs, aldrin, arsenic, carcinogenic PAHs, tetrachloroethylene</p> <p>PCBs, aldrin, arsenic, carcinogenic PAHs, tetrachloroethylene, 1,1-dichloroethane, dieldrin, trichloroethylene</p> <p>PCBs, carcinogenic PAHs</p> <p>Aldrin, lead</p> <p>VOCs, PAHs, PCBs</p> <p>Total volatile organics (predominantly chlorobenzene, 1,1-dichloroethane, ethylbenzene, tetrachloroethylene, toluene, 1,1,1-trichloroethane, trichloroethylene, xylenes)</p> <p>Total base neutrals/acids (predominantly PAHs, phenol, butyl benzyl phthalate, 1,2-dichlorobenzene)</p> <p>PCBs</p> <p>Inorganics (predominantly cadmium, copper, lead, mercury, zinc)</p> <p>PCBs</p>

TSCA PCB Spill Policy

) For each chemical listed above, the excess lifetime cancer risk exceeded 10^{-6} , and/or adverse noncarcinogenic effects may occur, and/or the concentrations exceeded ARARs, and/or migration in the environment may be expected.

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TABLE E-2 (Continued)
SUMMARY OF SCP SITE
ENDANGERMENT ASSESSMENT

Environmental Medium	Results	Predominant Chemicals (a)
Ground Water (Water Table and Till Aquifers) (b)	<p>Human Health Risks ----- Excess lifetime cancer risks for a possible future on-site worker, assumed to regularly consume on-site ground water, were greater than $10E-6$ (one in one million) for both the water table and till aquifers for the average and maximum plausible cases.</p> <p>Adverse noncarcinogenic effects may occur for a possible future on-site worker assumed to regularly consume on-site ground water from the water table aquifer (average and maximum plausible cases) and the till aquifer (maximum case only).</p> <p>Ecological Risks ----- Not evaluated; no aquatic or terrestrial wildlife species are expected to come into contact with on-site ground water.</p> <p>Migration Potential ----- Chemicals present in the water table and till aquifers may migrate into Peach Island Creek and to deeper soil depths. The water table aquifer flow is not well defined although it appears to flow radially across the site's boundaries; the till aquifer appears to flow towards the northwest. Further vertical migration into the bedrock aquifer is likely.</p> <p>Exceedances of ARARs/Other Guidance ----- Federal MCLs and MCLGs</p> <p>State MCLs</p> <p>State Ground Water Quality Standards</p> <p>Federal Ambient Water Quality Criteria for Protection of Human Health (adjusted for drinking water only)</p>	<p>Arsenic, benzene, bis-(2-ethylhexyl)phthalate, carcinogenic PANs, chloroform, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethylene, isophorone, methylene chloride, PCBs, 1,1,2,2-tetrachloroethane, tetrachloroethylene, vinyl chloride</p> <p>Chlorobenzene, chloroform, 1,2-trans-dichloroethylene, lead, methylene chloride, methyl ethyl ketone, nitrobenzene, tetrachloroethylene, toluene, 1,1,1-trichloroethane.</p> <p>VOCs, PCBs</p> <p>Benzene, 1,2-dichloroethane, 1,1,1-trichloroethane, chloroform, trichloroethylene, vinyl chloride, arsenic, cadmium, chromium, lead, mercury</p> <p>Benzene, chlorobenzene, 1,2-dichloroethane, 1,1,1-trichloroethane, 1,2-trans-dichloroethylene, xylenes, tetrachloroethylene, trichloroethylene, vinyl chloride, methyl ethyl ketone, PCBs</p> <p>PCBs, total PAHs, phenol, arsenic, cadmium, chromium, lead, mercury</p> <p>Benzene, 1,2-dichloroethane, 1,1,2,2-tetrachloroethane, chlorobenzene, 1,1,1-trichloroethane, chloroform, ethylbenzene, tetrachloroethylene, 1,2-trans-dichloroethylene, trichloroethylene, toluene, vinyl chloride, PCBs, total PAHs, phenol, arsenic, cadmium, chromium, lead, nickel</p>

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(a) For each chemical listed above, the excess lifetime cancer risk exceeded $10E-6$, and/or adverse noncarcinogenic effects may occur, and/or the concentrations exceeded ARARs, and/or migration in the environment may be expected.

(b) Data from the bedrock aquifer were unavailable; thus, potential risks associated with exposure to chemicals in this aquifer were not evaluated.

TABLE E-2 (Continued)

SUMMARY OF SCP SITE
ENDANGERMENT ASSESSMENT

Environmental Medium	Results	Predominant Chemicals (a)
Surface Water	<p>Human Health Risks ----- Not evaluated; exposure to site-related contaminants in surface water and sediments are considered unlikely to pose risks to human health since the site is located in a relatively inaccessible industrialized area and Peach Island Creek near the site is not, and is not expected to become, a popular recreational spot (although surface water has potential recreational uses).</p> <p>Ecological Risks ----- Adverse effects to aquatic life may occur from short- and long-term exposure to concentrations of inorganic chemicals in Peach Island Creek. Contributions to these concentrations may result from other (not site-related) discharges to the creek as well as upstream and downstream tidal transport.</p> <p>No adverse effects are expected to occur in mammalian wildlife (such as muskrats) through ingestion of surface water.</p> <p>Migration Potential ----- Chemicals in Peach Island Creek may be transported both up and down stream although the magnitude of impact of the site is difficult to determine due to complex tidal nature of the creek and availability of only limited sampling results.</p> <p>Exceedances of ARARs/Other Guidance ----- State Surface Water Quality Standards</p>	<p>Copper, mercury, nickel, zinc</p> <p>Ethylbenzene, xylenes, tetrachloroethylene, toluene, 1,1,1-trichloroethane, trichloroethylene, PCBs, dieldrin, bis(2-ethylhexyl)phthalate, 1,2-dichlorobenzene.</p> <p>PCBs</p>

(a) For each chemical listed above, the excess lifetime cancer risk exceeded $10E-6$, and/or adverse noncarcinogenic effects may occur, and/or the concentrations exceeded ARARs, and/or migration in the environment may be expected.

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TABLE E-2 (Continued)

SUMMARY OF SCP SITE
ENDANGERMENT ASSESSMENT

Environmental Medium	Results	Predominant Chemicals (a)
Sediment	Human Health Risks ----- Not evaluated	
	Ecological Risks ----- Adverse effects to aquatic life may occur from short- and long-term exposure to inorganic and organic chemicals in sediments. Concentrations of inorganic chemicals may be the result of other discharges to the area as well as upstream and downstream tidal transport.	Dieldrin, PCBs, cadmium, copper, lead, mercury, zinc.
	Adverse effects may occur in water fowl (including endangered species) by ingesting contaminated invertebrates. There are considerable uncertainties (e.g., in calculated interstitial water concentrations and bioconcentration factors) in these estimates.	Dieldrin, cadmium, copper, lead, mercury, nickel, zinc.
	Migration Potential ----- Chemicals on site have migrated into Peach Island Creek sediment, although the magnitude of impact is difficult to determine due to determine due to complex tidal nature of the creek and availability of only limited sampling results.	Ethylbenzene, xylenes, tetrachloroethylene, toluene, 1,1,1-trichloroethane, trichloroethylene, PCBs, dieldrin, bis-(2-ethylhexyl)phthalate, 1,2-dichlorobenzene.
	Exceedances of ARARs/Other Guidance ----- Proposed NOAA sediment action level for protection of aquatic life	PCBs

(a) For each chemical listed above, the excess lifetime cancer risk exceeded $10E-6$, and/or adverse noncarcinogenic effects may occur, and/or the concentrations exceeded ARARs, and/or migration in the environment may be expected.

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SUMMARY OF SCP SITE ENDANGERMENT ASSESSMENT

Environmental Medium	Results	Predominant Chemicals (a)
Air	<p>Human Health Risks</p> <p>Excess lifetime cancer risks for nearby workers who may inhale volatilized organics and suspended soil transported from the site exceeded $10E-6$ (on in one million) (maximum case only). Adverse noncarcinogenic effects are not expected to occur.</p> <p>Excess lifetime cancer risk for possible future on-site workers who may inhale volatilized organics and suspended soil exceeded $10E-6$ (one in one million) for both the average and maximum plausible case. Adverse noncarcinogenic effects are not expected to occur.</p> <p>Ecological Risks</p> <p>Not evaluated; no terrestrial mammals observed on-site. Ambient air exposures are not likely to result in significant exposures.</p> <p>Migration Potential</p> <p>Chemicals released into air from the site (via volatilization and suspension of surface soil) may migrate off site.</p> <p>Exceedances of ARARs/Other Guidance</p> <p>Not available except for lead and its ARAR was not exceeded.</p>	<p>1,1-Dichloroethylene, vinyl chloride, PCBs, chromium.</p> <p>1,1-Dichloroethylene, PCBs, methylene chloride, trichloroethylene, chloroform, chromium, arsenic.</p> <p>VOC, PAHs, PCBs</p>

(a) For each chemical listed above, the excess lifetime cancer risk exceeded $10E-6$, and/or adverse noncarcinogenic effects may occur, and/or the concentrations exceeded ARARs, and/or migration in the environment may be expected.

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SOIL

Contaminated medium	Transport Mechanism	Exposure Pathway and Receptor	Risk Consequence	Remedial Action Objective
Soil	Chemicals in on-site soil have migrated down to deeper soil depths and into the water table and till aquifers. Further migration to bedrock aquifer is likely. Chemicals may also be released from soil into air by volatilization and suspension of surface soil. Chemicals may be transported via surface soil runoff into Peach Island Creek.	Direct contact with surface soils (incidental ingestion and dermal absorption) by current trespassers and employees of a possible future on-site facility.	Excess lifetime cancer risks exceed one in one million (1E-06) due to several organic chemicals (including PCBs) and arsenic for both trespassers and employees of a possible future on-site facility.	Reduce surface soil chemical concentrations to: (1) ARARs - NJDEP ECRA objectives for soil, TSCA limits for PCBs; or (2) Calculated cleanup levels based on target land-use and target level of risk (e.g., industrial use at 1E-05 risk level).
		Direct contact with subsurface soils (incidental ingestion and dermal absorption) by possible future short-term construction workers.	Excess lifetime cancer risks exceed one in one million due to several organic chemicals (including PCBs) and arsenic for possible future short-term construction workers.	Reduce subsurface soil chemical concentrations to: (1) ARARs - NJDEP ECRA objectives for soil, TSCA limits for PCBs; or (2) Calculated cleanup levels based on target land-use and target level of risk (e.g., industrial use at 1E-05 risk level).

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GROUND WATER

Contaminated Medium	Transport Mechanism	Exposure Pathway and Receptor	Risk Consequence	Remedial Action Objective
<p>Ground Water:</p> <p>- Water Table and Till Aquifers</p>	<p>Chemicals in aquifer may migrate into Peach Island Creek and to deeper soil depths. Further vertical migration into bedrock aquifer is likely. Lateral migration to off-site areas is likely.</p>	<p>Ingestion of on-site ground water by employees of a possible future on-site facility (e.g., hotel employee).</p>	<p>Excess lifetime cancer risks exceed one in one million (1E-06) for both water table and till aquifers and for both average and maximum exposure cases due to several organic chemicals (including PCBs and vinyl chloride), and arsenic. Adverse noncarcinogenic effects may also occur for both aquifers due to several organic chemicals (including chlorinated compounds and lead).</p>	<p>Potential remedial objective is to:</p> <ol style="list-style-type: none"> 1. Reduce chemical concentrations in water table and till aquifers to: <ol style="list-style-type: none"> (1) ARARs - NJDEP Groundwater Standards, Federal Groundwater Standard; or (2) Calculated cleanup levels for water table and till aquifer based on target land-use and target levels of risk; or II. Reduce chemical concentrations in soils to prevent further migration into ground water.
<p>- Bedrock Aquifer</p>	<p>Potential exists for chemical migration to bedrock aquifer, although no data from this aquifer are available.</p>	<p>Ingestion of ground water by off-site receptors in site vicinity and possible future on-site receptors.</p>	<p>Not analyzed - data unavailable.</p>	<p>Prevent chemical migration to bedrock aquifer by removal of soils and cleanup of overlying aquifers as above.</p>

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SURFACE WATER AND SEDIMENT

Contaminated Medium	Transport Mechanism	Exposure Pathway and Receptor	Risk Consequence	Remedial Action Objective
Surface Water	Chemicals in Peach Island Creek may be transported both up and down stream. NOTE: Magnitude of site impact difficult to determine due to tidal nature of creek and limited availability of sampling data.	Direct contact with surface water by aquatic life.	Adverse effects may occur from both short- and long-term exposures to inorganic chemicals in creek. NOTE: Magnitude of site impact difficult to determine due to tidal nature of creek and limited availability of sampling data.	Reduce chemical concentrations in soils and water table and till aquifer ground water to prevent further migration to Peach Island Creek (a).
Sediment	Chemicals have migrated from site to Peach Island Creek sediments, which may be transported up and down stream. NOTE: Magnitude of site impact difficult to determine due to tidal nature of creek and limited availability of sampling data.	Direct contact with sediments by aquatic life. Ingestion of sediment-inhabiting invertebrates by waterfowl.	Adverse effects may occur from both short- and long-term exposures to organics (PCBs, dieldrin) and several inorganics by aquatic life. Adverse effects to waterfowl may occur, although there are considerable uncertainties in the estimated risks. NOTE: Magnitude of site impact difficult to determine due to tidal nature of creek and limited availability of sampling data.	Reduce chemical concentrations in soils and water table and till aquifer ground water to prevent further migration to Peach Island Creek sediments. Clean-up sediments adjacent to site to risk-based (for ecological effects) levels (a).

(a) Not human health based.

AIR

Contaminated Medium	Transport Mechanism	Exposure Pathway and Receptor	Risk Consequence	Remedial Action Objective
Air	Chemicals released into air from site may be transported to off-site receptors.	Nearby off-site workers	Excess lifetime cancer risks exceed one in one million ($1E-06$) for nearby off-site workers who may inhale volatilized organics (including chlorinated organics and PCBs) and suspended site soils containing chromium (maximum exposure case only).	Reduce chemical concentrations in soils to calculated risk-based levels to prevent further chemical releases into air.
		Employees of a possible future on-site facility	Excess lifetime cancer risks exceed one in one million ($1E-06$) for possible future on-site workers who may inhale volatilized organics (including chlorinated organics and PCBs) and suspended site soils containing chromium and arsenic.	Reduce chemical concentrations in soils to calculated risk-based levels to prevent further chemical releases into air.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278

FACSIMILE REQUEST AND COVER SHEET

TO: Marian Donovan Callin

OFFICE/PHONE ERM (215) 524-7335

FROM: Janet Feldstein

PHONE (212) 264-0613

DATE 3/10/89

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278

FACSIMILE REQUEST AND COVER SHEET

TO:

GIL WEL

OFFICE/PHONE

Union Carbide (201)

563-
5412

FROM:

Janet Feldstein

PHONE

(212) 264-0613

DATE

3/10/89

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<p>3. Article Addressed to:</p> <p><i>Mr. H Gilbert Wei</i> <i>Union Carbide Corporation</i> <i>P.O. Box 670</i> <i>Bound Brook, NJ 08805</i></p>	<p>4. Article Number</p> <p><i>1651623531</i></p> <p>Type of Service:</p> <p><input type="checkbox"/> Registered <input type="checkbox"/> Insured</p> <p><input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD</p> <p><input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise</p> <p>Always obtain signature of addressee or agent and DATE DELIVERED.</p>
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